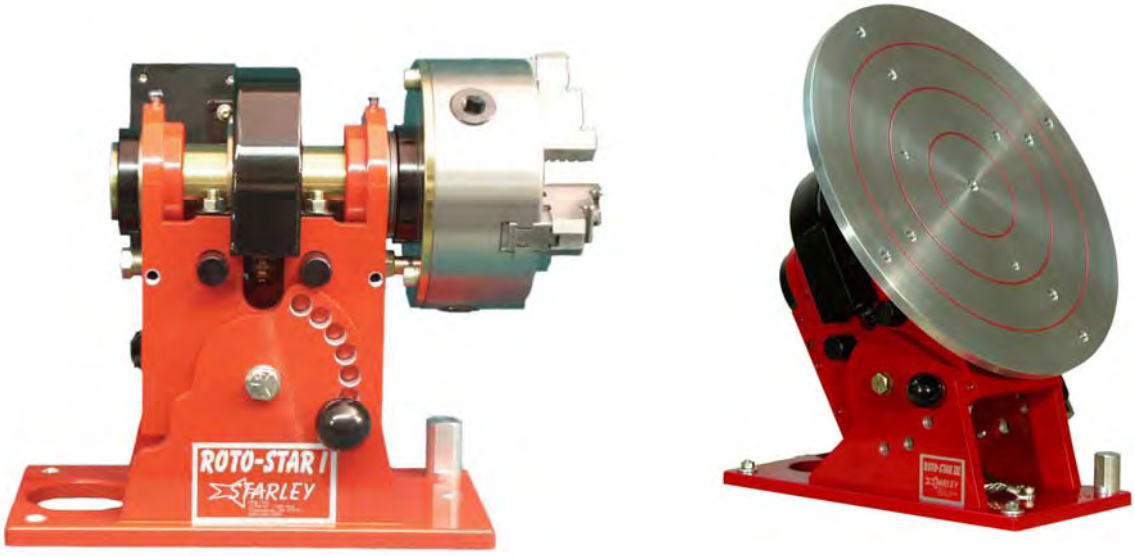
ROTO-STAR

BENCHTOP WELDING POSITIONER

USER'S MANUAL



JANCY ENGINEERING INC.
2735 Hickory Grove Road
Davenport, Iowa 52804
Phone (563) 391-1300
Fax (563) 391-2323

Jancy Bench-Top Welding Positioner

Congratulations on your purchase of a Jancy welding positioner. Please take a moment to complete and mail your product warranty registration card. Doing so will validate your machine's warranty period and ensure prompt service if needed. Thank you for selecting a welding positioner from Jancy Engineering Inc.

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LIMITED WARRANTY

Jancy Engineering Inc. will, within (12) months from the original date of purchase, repair or replace any goods found to be defective in materials or workmanship, provided the product warranty registration card has been returned to Jancy Engineering Inc. within (30) days of purchase date. This warranty is void if the item has been damaged by accident, neglect, improper service or other causes not arising out of defects in materials or workmanship. This warranty does not apply to machines and/or components that have been altered, changed, or modified in any way, or subject to use beyond recommended capacities and specifications. Electrical components are subject to respective manufactures warranties. All goods returned defective shall be returned prepaid freight to Jancy, which shall be the buyer's sole and exclusive remedy for defective goods. In no event shall Jancy Engineering be liable for loss or damage resulting directly or indirectly from the use of merchandise or from any other cause. Jancy Engineering is not liable for any costs incurred on such goods or consequential damages. No officer, employee or agent of Jancy is authorized to make oral representations of fitness or to waive any of the foregoing terms of sale and none shall be binding on Jancy.

JANCY ENGINEERING RESERVES THE RIGHT TO MAKE IMPROVEMENTS AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE

IMPORTANT SAFETY INSTRUCTIONS

WARNING!

WHEN USING ELECTRIC TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE RISK OF FIRE, ELECTRIC SHOCK AND PERSONAL INJURY.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE

1. **Keep work area clean**
   Cluttered areas and benches invite injuries.

2. **Consider work area environment**
   Do not expose power tools to rain.
   Do not use power tools in damp or wet locations.
   Keep work area well lit.
   Do not use tool in presence of flammable liquids or gases.

3. **Guard against electric shock**
   Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges and refrigerator enclosures.

4. **Keep children away**
   Do not let visitors contact tool or extension cord.
   All visitors should be kept away from work area.

5. **Store idle tools**
   When not in use, tools should be stored in a dry, high and locked-up place, out of reach of children.

6. **Do not force tool**
   It will do the job better and safer at the rate for which it was intended.

7. **Use the right tool**
   Do not force a small tool or attachment to do the job of a heavy-duty tool.

8. **Dress properly**
   Do not wear loose clothing or jewelry. They can be caught up in moving parts.
   Non-skid foot wear is recommended when working outdoors.
   Wear protective hair covering to contain long hair.

9. **Check for damaged parts**
   Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other condition that may effect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center. Do not use this tool if switches do not turn it on and off. Have defective switches replaced by an authorized service center.

WARNING: SPECIAL INSTRUCTIONS

1. Always securely fasten the ROTO-STAR to the work surface, using ½” bolts through the holes in the base plate. The ROTO-STAR is not stable unless fastened down, especially with a load in the chuck or on the face plate.

2. Use caution when changing the tilt position of the ROTO-STAR. Never remove the tilt bolt unless the tilting portion of the ROTO-STAR is securely held. Never attempt to change the tilt position with a load in the chuck or on the face plate.

3. Ensure that the ROTO-STAR is securely attached to the welder’s ground lead, either through the underside of the base plate to a grounded metallic work surface, or by clamping the welder’s ground lead to the ground stud on the base plate.

4. Never reverse the direction of rotation with the motor running. Allow the motor to come to a complete stop before reversing. Failure to do so will result in excessively high motor current, possibly resulting in damage to the motor and or controller.

INSTALLATION

WARNING

Read and follow all instructions

1. **Securely bolt or clamp the ROTO-STAR to the work surface.**

   It is imperative that the base plate of the ROTO-STAR be securely fastened to a stable work surface. Failure to do so may result in the ROTO-STAR and its load tipping over, possibly resulting in equipment damage and or operator injury. Use ½ “bolts through the mounting holes provided in the base plate. If so desired, the grounding of the ROTO-STAR may be accomplished by securing the unit to a metallic work surface that is connected to the welding machine ground (the under side of the ROTO-STAR is bare metal).

2. **Attach ROTO-STAR to welding machine ground.**

   If you have bolted the ROTO-STAR to a metallic work surface in step 1 above, then ensure that the welding machine ground is securely attached to the work surface. If it is not possible to ground the ROTO-STAR through the work surface, then attach the welding machine ground clamp to the aluminum ground stud located on the base plate below the chuck. Failure to securely ground the ROTO-STAR to the welding machine will result in motor and or controller damage. **The ROTO-STAR warranty does not cover damage due to failure to properly ground the unit.**

3. **Attach ROTO-STAR motor to controller.**

   Plug the ROTO-STAR motor into the controller. Rotate the cable connector against the socket on the controller until it drops into place, and then rotate the outer ring on the cable connector to lock it in place.

4. **Attach motor controller to foot pedal and AC line.**

   Plug the motor controller AC line into the connector on the end of the foot pedal cord. Then plug the foot pedal connector into the AC line socket. The foot pedal acts as a switch in the AC line, applying power to the motor controller only when depressed.

5. **Test ROTO-STAR motion.**

   Test the installation as follows:

   A) Turn the speed control knob on the motor controller fully CCW (zero RPM).
   B) Turn the AC power switch on the motor controller ON (may be marked 0/1, 1 is on).
   C) If so equipped, switch the Break/Run switch on the controller to Run.
   D) Depress the foot pedal. Slowly turn the speed control knob CW to start rotation.
   You should be able to go from Zero RPM at fully CCW on the speed control to maximum speed (approx 15 RPM on the ROTO 1 and 8 on the ROTO 3) at fill CW. Lifting off the foot pedal should stop all rotation. With the motor stopped, change the direction of rotation by switching the FWD/REV switch on the controller, and again press the foot pedal and check rotation in the opposite direction.
   NEVER CHANGE ROTATION DIRECTION WITH THE MOTOR RUNNING.
   Doing so will cause excessive motor current, possibly resulting in damage to the motor and or controller.

Package contents

ROTO-STAR 1 and 3

Main unit with chuck
T-handle
5/16” Allen (type) wrench
Warranty card
DVD
Manual
Foot pedal
Control box

ROTO-STAR 1-P and 3P

Main unit with face plate
Warranty card
DVD
Manual
Foot pedal
Control box

MAINTENANCE

PERIODICALLY CHECK THE FOLLOWING MAINTENANCE ITEMS TO ENSURE CONTINUED TROUBLE FREE OPERATION OF YOUR ROTO-STAR:

1. Add a few drops of lubricating oil to the two oil fittings on the spindle housing.

2. Check that all connections to the welder ground system are secure and clean.

3. Check the drive chain for proper tension. If the chain is too loose, the spindle may reverse direction slightly when the motor is stopped, especially if the load is not balanced. Tighten the chain as follows:

   A) Loosen the two set screws securing the motor mount pins located on the back side of the spindle housing.

   B) Loosen the two 10-32 screws on the side of the chain guard where it attaches to the angle bracket to the motor mount. Do not loosen the screws attaching the guard bracket to the motor mount.

   C) On the ROTO-STAR 1, loosen the two 5/16 nuts attaching the chain guard to the front of the spindle housing. The studs these nuts are on are actually long set screws that secure the motor mount pins on the front side of the spindle housing. Loosen these two set screws with an Allen type wrench to allow the motor mount pins to move in the housing.
   On the ROTO-STAR 3, remove the two 5/16 bolts securing the chain guard to at the front of the spindle housing. Then, using an Allen type wrench, loosen the two set screws securing the motor mount pins.

   D) You should now be able to slide the motor assembly back, tightening the drive chain. It will be necessary to apply pressure to the motor assembly, holding the chain tight, while you tighten a set screw on each motor mount pin. The slotted attachment for the chain guard should allow sufficient movement of the motor assembly to allow the chain guard to be tightened. If not, the chain may need replacement.

   E) Reverse the steps above to tighten the four set screws securing the motor mount pins, the guard screws to the angle bracket, and the guard attachment at the front of the spindle housing.

Parts not shown

Part#	Description
RO631-DGR130	Kit, low gearing for Roto-Star 3
RO633-2	Motor, Roto-Star 3 (220 V)
RO635	Motor brush, Roto-Star 1
RO637	Motor brush, Roto-Star 3
RO639	Brush cover, Roto-Star 1
RO641	Brush cover, Roto-Star 3
RO647	Kit, low gearing for Roto-Star 1
RO721	Hex key, 5/16 inch (short)

Optional equipment

PART #	DESCRIPTION
RO510	Roto-Star adjustable arm rest
RO570	Idler roller assembly
RO540	Variable speed foot pedal with control box
RO550	Roto-Star I purge plug
RO555	Roto-Star III purge plug
RO501	12" surface plate for ROTO1 with chuck
RO505	16" surface plate for ROTO3 with chuck

Surface plates

Roto-Star machines equipped with surface plates add versatility when welding irregular shapes and materials. Machined from solid aluminum, Roto-Star plates provide a quality work surface suitable for most welding applications. All surface plates have reference rings for quick part positioning and tapped holes for secure clamping. 12" and 16" diameters are available for ROTO1 and ROTO3 respectively.

RO574 - Wing Bolt, adjustable clamp

RO507 - 16" diameter for 3-P
RO503 - 12" diameter for 1-P

ROTO-STAR 3-P (shown)
ROTO-STAR 1-P (not shown)

Specifications

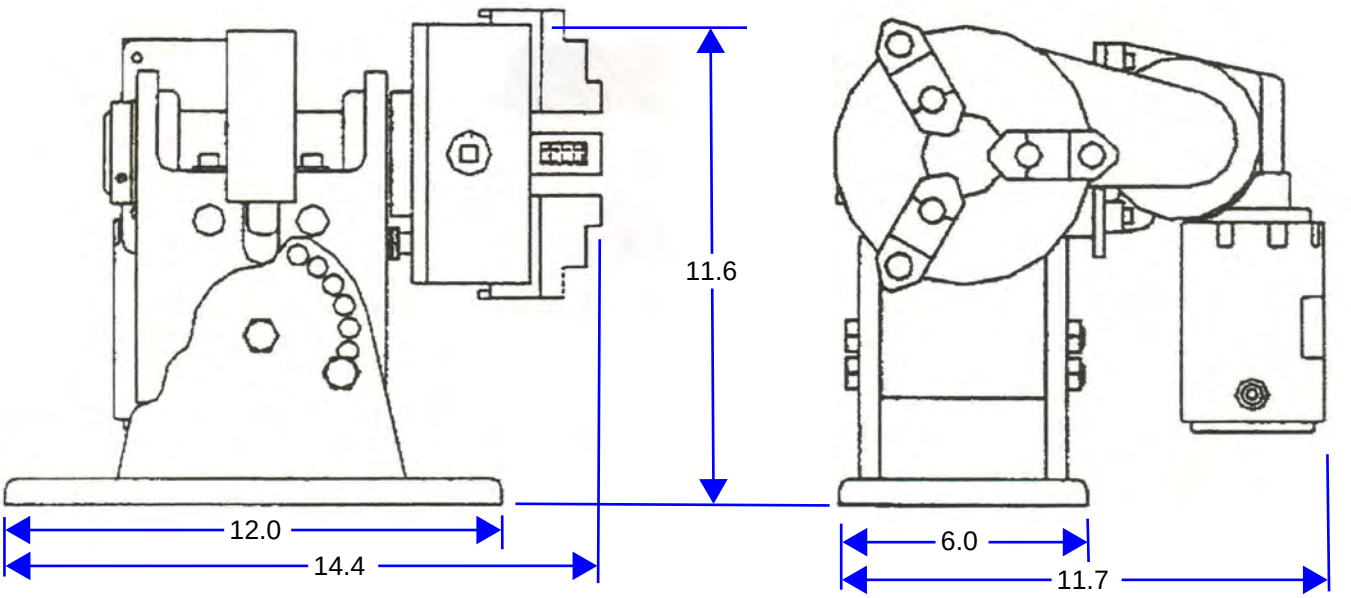
	ROTO-STAR I	ROTO-STAR III	ROTO-STAR I-P	ROTO-STAR III-P
Chuck	6"	8"	—	—
Swing at 0° (maximum)	16"	20"	16"	20"
Vertical weight capacity	200 lbs.	250 lbs.	200 lbs.	250 lbs.
Horizontal weight capacity	100 lbs.	150 lbs.	100 lbs.	150 lbs.
Thru spindle part capacity	1-1/2" diameter	2-1/2" diameter	1-1/2" diameter	2-1/2" diameter
Spindle rotation	360°	360°	360°	360°
Spindle speed	0 to 15 RPM	0 to 8 RPM	0 to 15 RPM	0 to 8 RPM
Angle adjustment*	0 to 90°	0 to 90°	0 to 90°	0 to 90°
Grounding capacity	300A	300A	300A	300A
Voltage**	120v	120v	120v	120v
Shipping weight	60 lbs.	90 lbs.	45 lbs.	65 lbs.
Optional rotary table	12" diameter	16" diameter	—	—
Fixed rotary table	—	—	12" diameter	16" diameter

*Adjusts in 15° increments.
**Available in 220 volt, single phase.

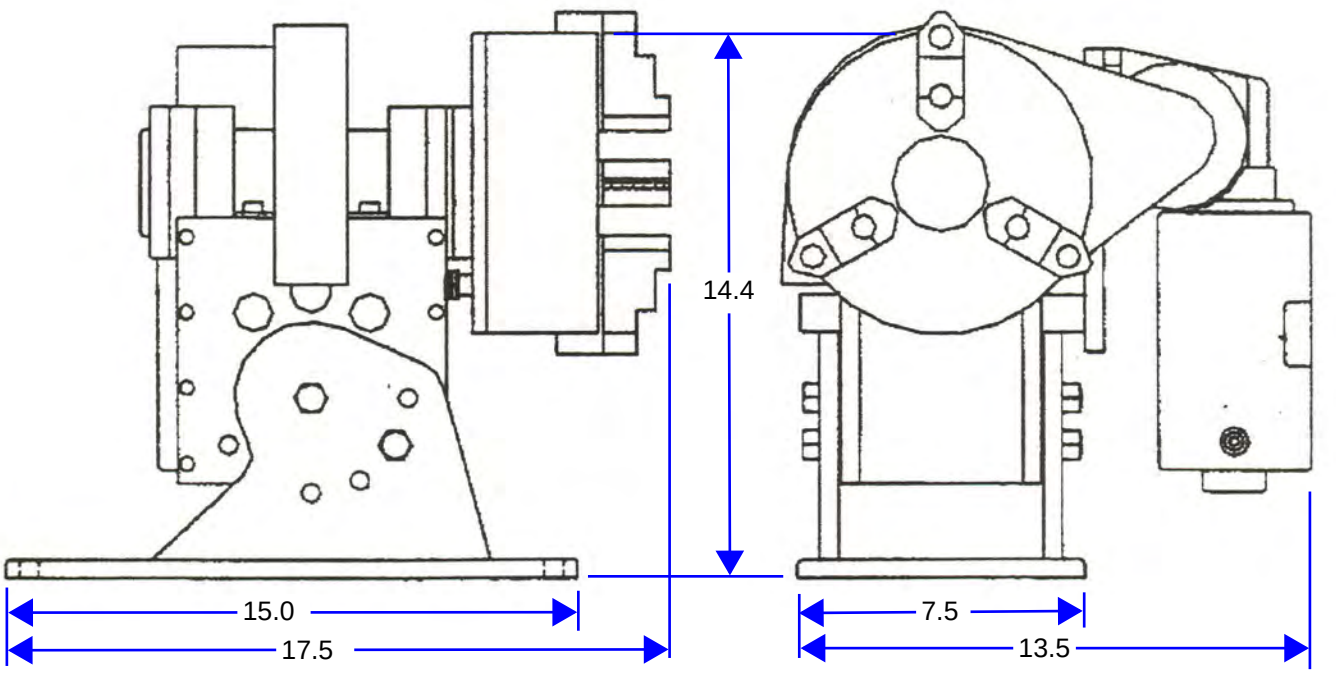
Roto-Star welding positioners

PART #	DESCRIPTION
ROTO1	Roto-Star I
ROTO3	Roto-Star III
ROTO1-P	Roto-Star I with plate
ROTO3-P	Roto-Star III with plate

DIMENSIONS

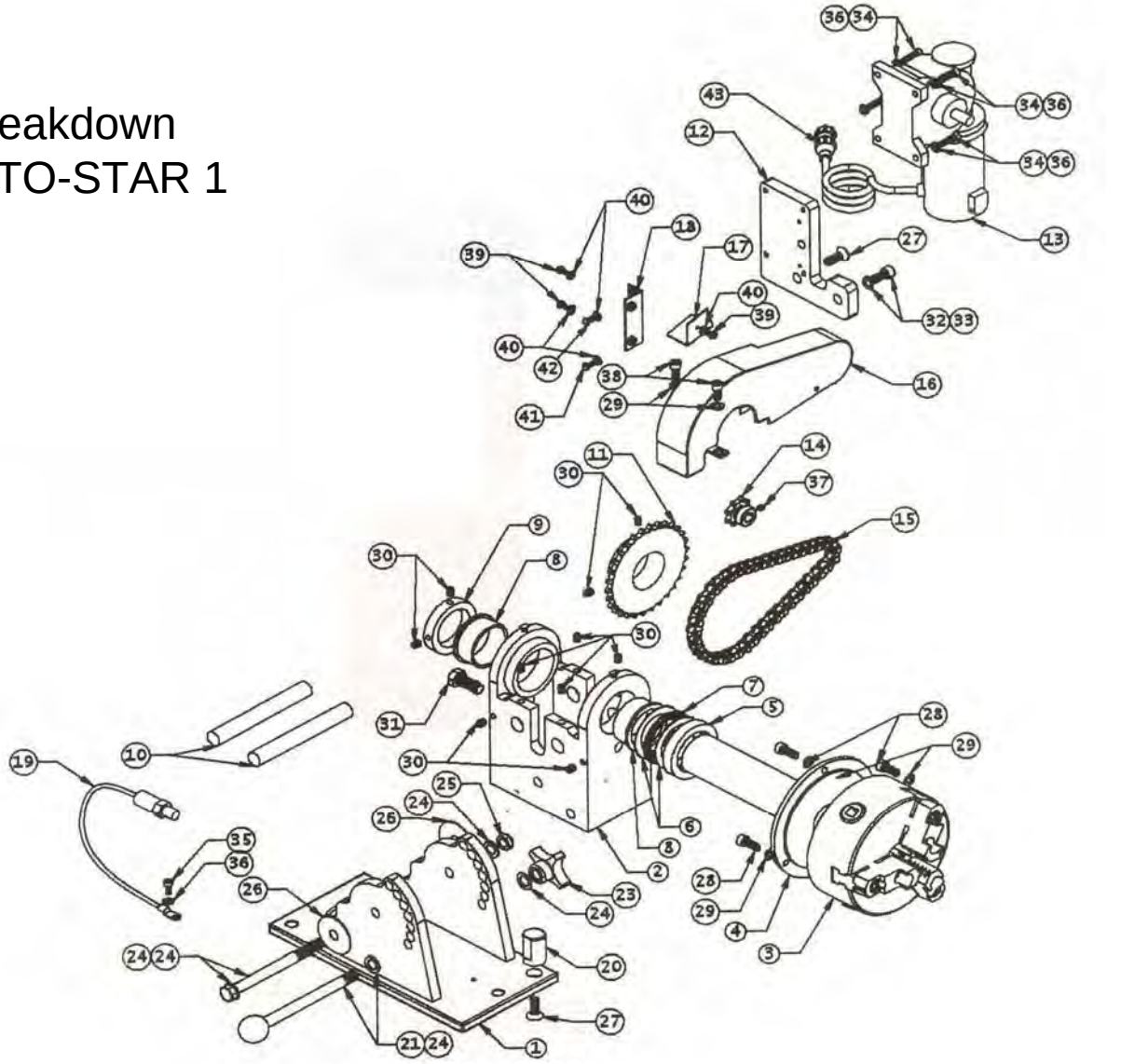


ROTO-STAR 1



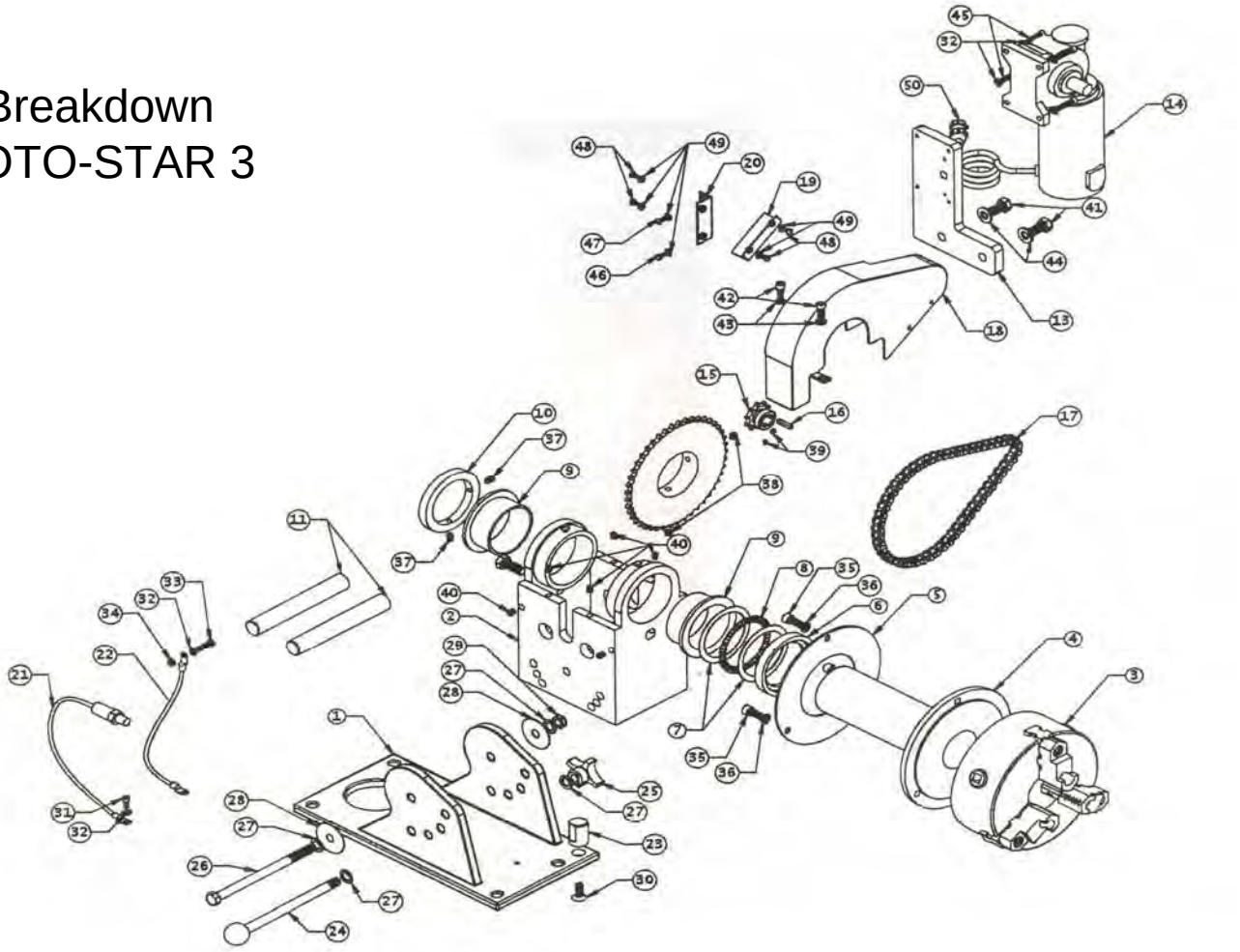
ROTO-STAR 3

Breakdown
ROTO-STAR 1



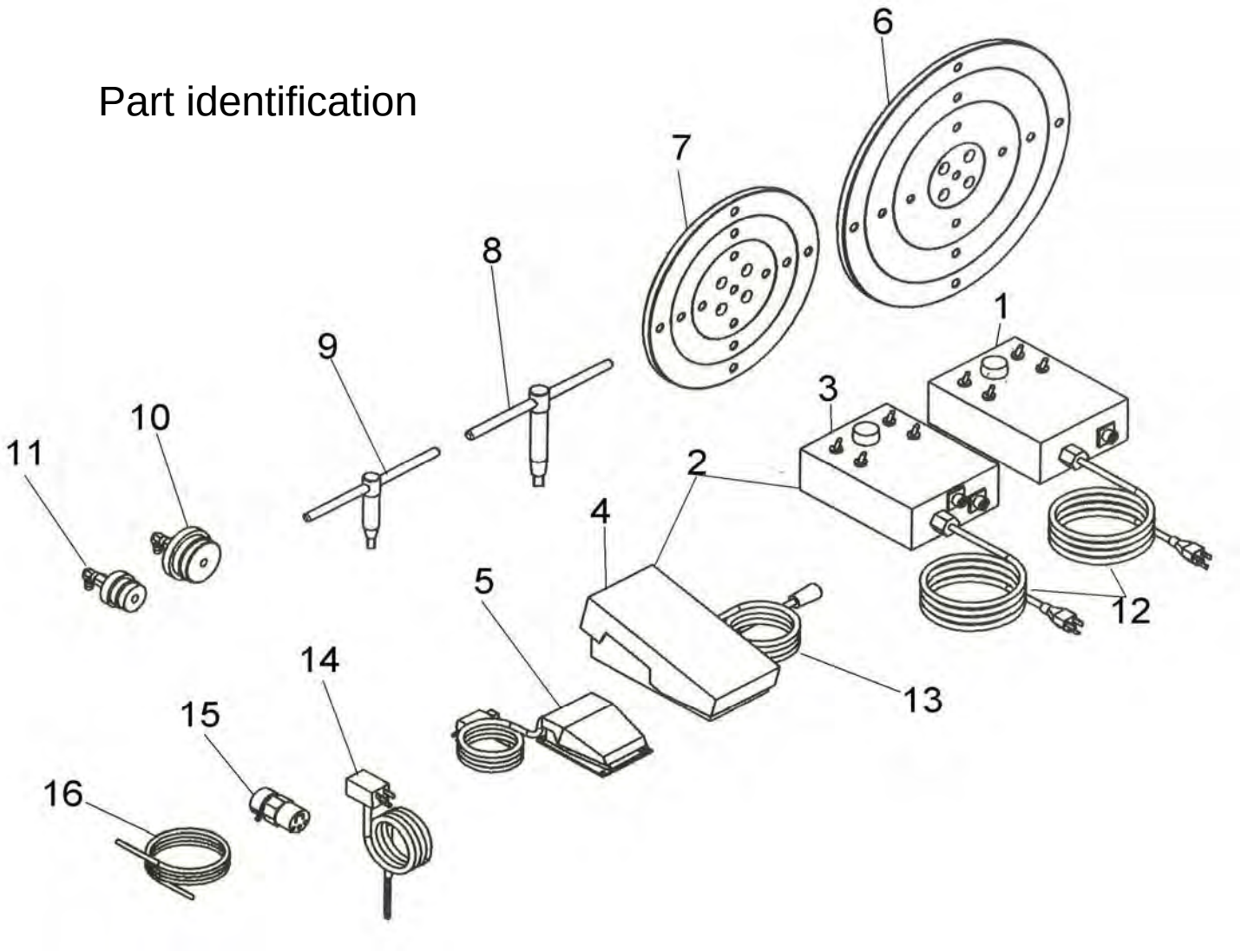
Item	Part	Description	Qty.	Item	Part	Description	Qty.
1	RO653	Base Frame Assy., Roto-Star 1	1	23	RO693	Knob	1
2	RO655	Upper Frame, Roto-Star 1	1	24	RO697	Washer, flat 1/2" SS	4
3	RO621	Chuck, 3 jaw Roto-Star 1	1	25	RO696	Nut, 1/2"-13 nylock	1
4	RO659	Drive Shaft Weldment, Roto-Star 1	1	26	RO698	Washer, flat 1/2" ss (large od)	2
5	RO665	Spacer Ring, Roto-Star 1	1	27	RO706	Scr, FHSCS 3/8"-16 x 3/4 ss	2
6	RO667B	Thrust Washer Plate, Roto-Star 1	2	28	RO714	Scr, SHCS M8-1.25 x 20 ss	3
7	RO667A	Thrust Washer Bearing, Roto-Star 1	1	29	RO701	Washer, flat 5/16" ss	5
8	RO670	Bronze Bushing	2	30	RO719	Scr, CPSSS 5/16"-18 x 3/8 ss	10
9	RO671	Rear Locking Collar, Roto-Star 1	1	31	RO708	Scr, HHCS 1/2"-13 x 1 1/4 ss	1
10	RO673	Chain Tension Rod, Roto-Star 1	2	32	RO716	Scr, SHCS 3/8"-16 x 3/4 ss	1
11	RO676	Gear, 30T Roto-Star 1	1	33	RO702	Washer, flat 3/8" ss	1
12	RO677	Motor Mount Plate, Roto-Star 1	1	34	RO645	Scr, SHCS 1/4"-20 x 3/4 ss	4
13	RO631	Motor, 90 VDC - Roto-Star 1	1	35	RO710	Scr, SHCS 1/4"-20 x 1/2 ss	1
14	RO682	Pinion Gear, 10T Roto-Star 1	1	36	RO700	Washer, flat 1/4" ss	5
15	RO685	Chain, Roto-Star 1	1	37	RO718	Scr, CPSSS 1/4"-20 x 1/4 ss	1
16	RO686	Chain Guard, Roto-Star 1	1	38	RO713	Scr, SHCS 5/16"-18 x 5/8 ss	2
17	RO687	Chain Guard, bracket #1 Roto-Star 1	1	39	RO704	Scr, BHCS 10-32 x 3/8 ss	3
18	RO689	Chain Guard, bracket #2	1	40	RO699	Washer, flat #10 ss	5
19	RO565	Grounding Contact, 12" long	1	41	RO707	Scr, HHCS 10-32 x 1/2 ss	1
20	RO690	Grounding Post	1	42	RO705	Scr, BHCS 10-32 x 1/2 ss	1
21	RO692	Handle with Knob, Roto-Star 1	1	43	RO576	Motor cord (only) with plug	
22	RO694	Scr, HHCS 1/2"-13 x 5 1/2	1				

Breakdown
ROTO-STAR 3



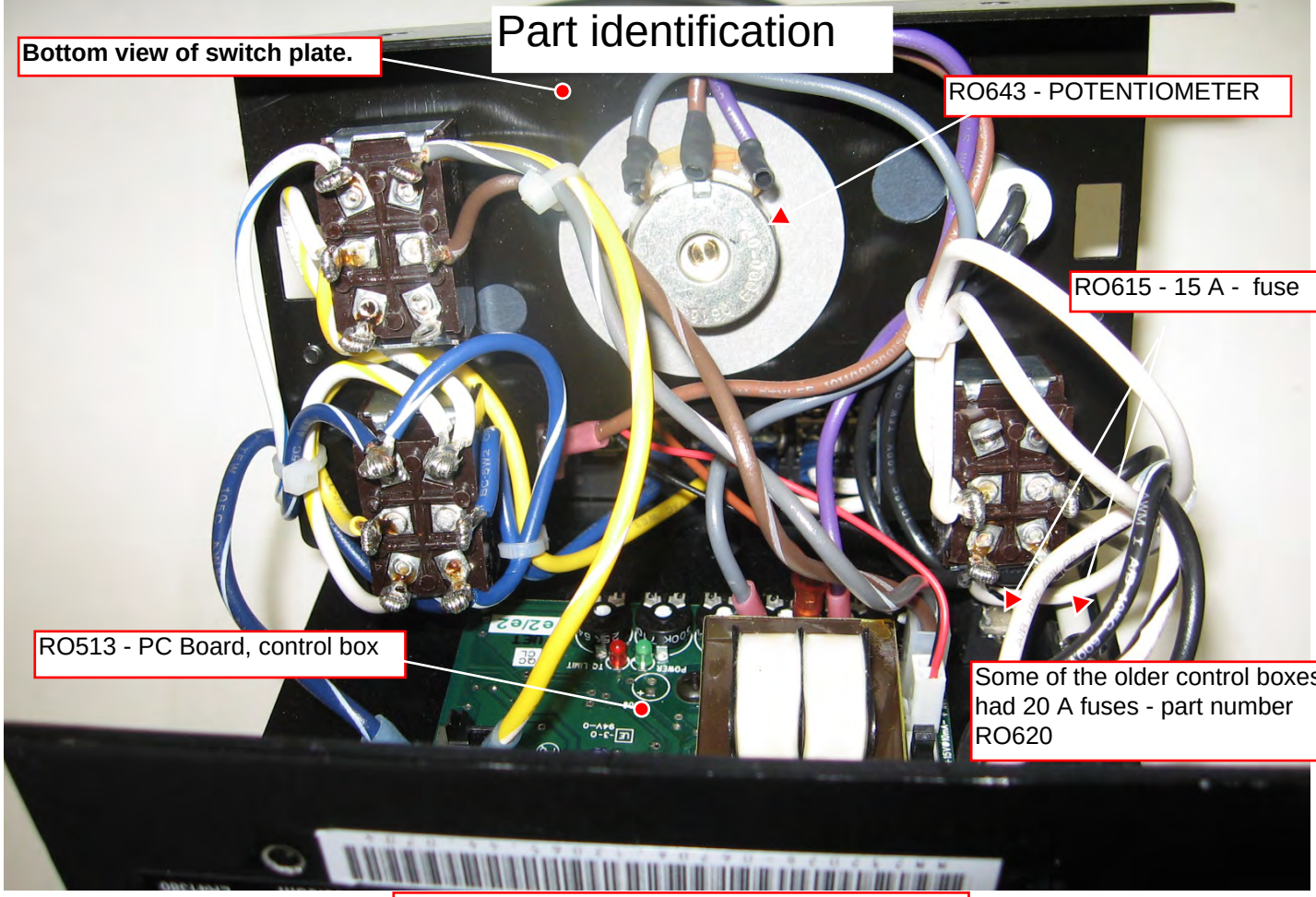
Item	Part	Description	Qty.	Item	Part	Description	Qty.
1	RO578	Base Frame Assy., Roto-Star 3	1	26	RO711	Scr, HHCS 1/2"-13 x 7	1
2	RO657	Upper Frame, Roto-Star 3	1	27	RO697	Washer, flat 1/2" ss	4
3	RO623	Chuck, 3 jaw Roto-Star 3	1	28	RO698	Washer, flat 1/2" ss (large od)	2
4	RO661	Drive Shaft Weldment, Roto-Star 3	1	29	RO696	Nut, 1/2"-13 nylock	1
5	RO669	Contact Plate	1	30	RO706	Scr, FHSCS 3/8"-16 x 3/4 ss	1
6	RO663	Spacer Ring, Roto-Star 3	1	31	RO710	Scr, SHCS 1/4"-20 x 1/2 ss	1
7	RO668B	Thrust Washer Plate, Roto-Star 3	2	32	RO700	Washer, flat 1/4" ss	6
8	RO668A	Thrust Washer Bearing, Roto-Star 3	1	33	RO709	Scr, BHCS 1/4"-20 x 1 ss	1
9	RO651	Bronze Bushing	2	34	RO695	Nut, 1/4"-20 ss	1
10	RO672	Rear Locking Collar, Roto-Star 3	1	35	RO717	Scr, SHCS M10 X 1 ss	3
11	RO674	Chain Tension Rod, Roto-Star 3	2	36	RO702	Washer, flat 3/8" ss	3
12	RO675	Gear, 45T Roto-Star 3	1	37	RO720	Scr, CPSSS 5/16"-18 x 1/2 ss	2
13	RO679	Motor Mount Plate, Roto-Star 3	1	38	0010185	Scr, CPSSS 3/8"-24 x 5/16	2
14	RO633	Motor, 90 VDC - Roto-Star 3	1	39	RO718	Scr, CPSSS 1/4"-20 x 1/4 ss	2
15	RO681	Pinion Gear, 10T Roto-Star 3	1	40	RO719	Scr, CPSSS 5/16"-18 x 3/8 ss	6
16	RO683	Key, 3/16" x 1"	1	41	RO708	Scr, HHCS 1/2"-13 x 1 1/4 ss	3
17	RO684	Chain, Roto-Star 3	1	42	RO715	Scr, SHCS 5/16"-18 x 3/8 ss	2
18	RO509	Chain Guard, Roto-Star 3	1	43	RO701	Washer, flat 5/16" ss	2
19	RO688	Chain Guard, bracket #1 Roto-Star 3	1	44	RO697	Washer, flat 1/2" ss	2
20	RO689	Chain Guard, bracket #2	1	45	RO712	Scr, SHCS 1/4"-20 x 1 ss	4
21	RO566	Grounding Contact, 13" long	1	46	RO707	Scr, HHCS 10-32 x 1/2 ss	1
22	RO567	Ground Strap	1	47	RO705	Scr, BHCS 10-32 x 1/2 ss	1
23	RO690	Grounding Post	1	48	RO704	Scr, BHCS 10-32 x 3/8 ss	4
24	RO691	Handle with Knob, Roto-Star 3	1	49	RO699	Washer, flat #10 ss	6
25	RO693	Knob	1	50	RO576	Motor cord (only) with plug	

Part identification

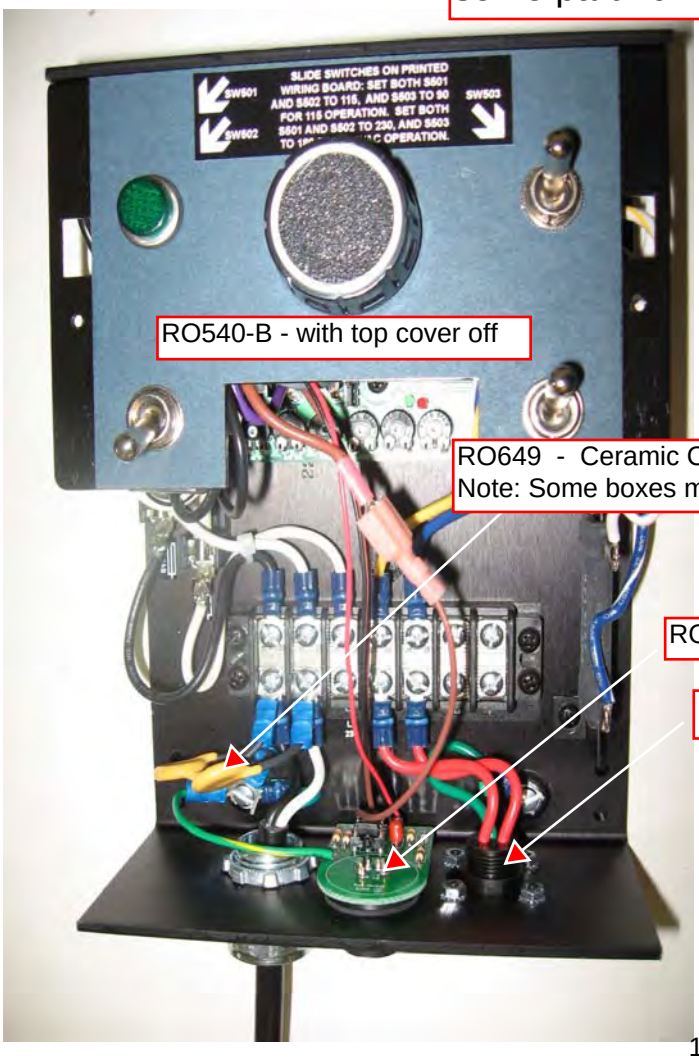


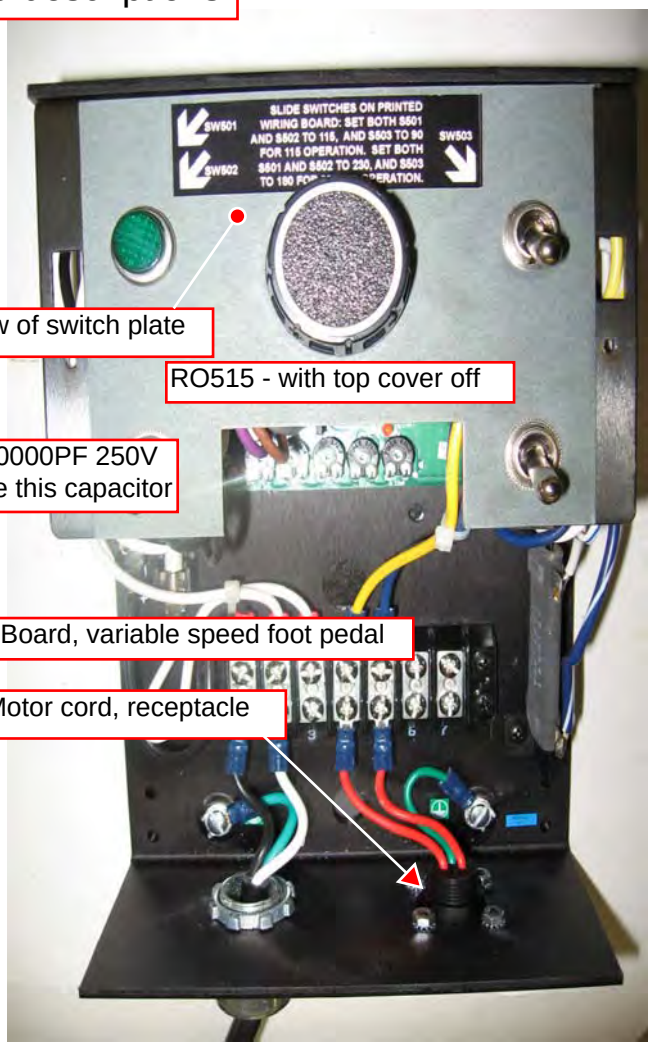
Item	Part	Description
1	RO515	Control Box, complete (std.)
	RO515-2	Control Box, complete (std.)-220v
2	RO540	Foot Pedal, var. spd. w/cont. box
	RO540-15	Foot Ped.,var.spd.w/con.box/w15'crd.
3	RO540-B	Control Box, var. spd. complete
4	RO540-F	Foot Pedal, variable speed
5	RO520	Foot Pedal, standard complete
6	RO505	Surface Plate, 16" for chuck(ROTO3)
7	RO501	Surface Plate, 12" for chuck(ROTO1)
8	RO525	Chuck Key, Roto-Star 3
9	RO530	Chuck Key, Roto-Star 1
10	RO555	Purge Plug, Roto-Star 3
11	RO550	Purge Plug, Roto-Star 1
12	RO536	Power Cord, control box
13	RO538	Cord, var. spd. foot pedal 8' long
	RO538-15	Cord, var. spd. foot pedal 15' long
	RO538-50	Cord, var. spd. foot pedal 50' long
14	RO537	Cord, std. foot pedal - 7' 6" long
15	RO526	Female Plug Socket, ext. cord
16	RO539	Power Cord, control box extension

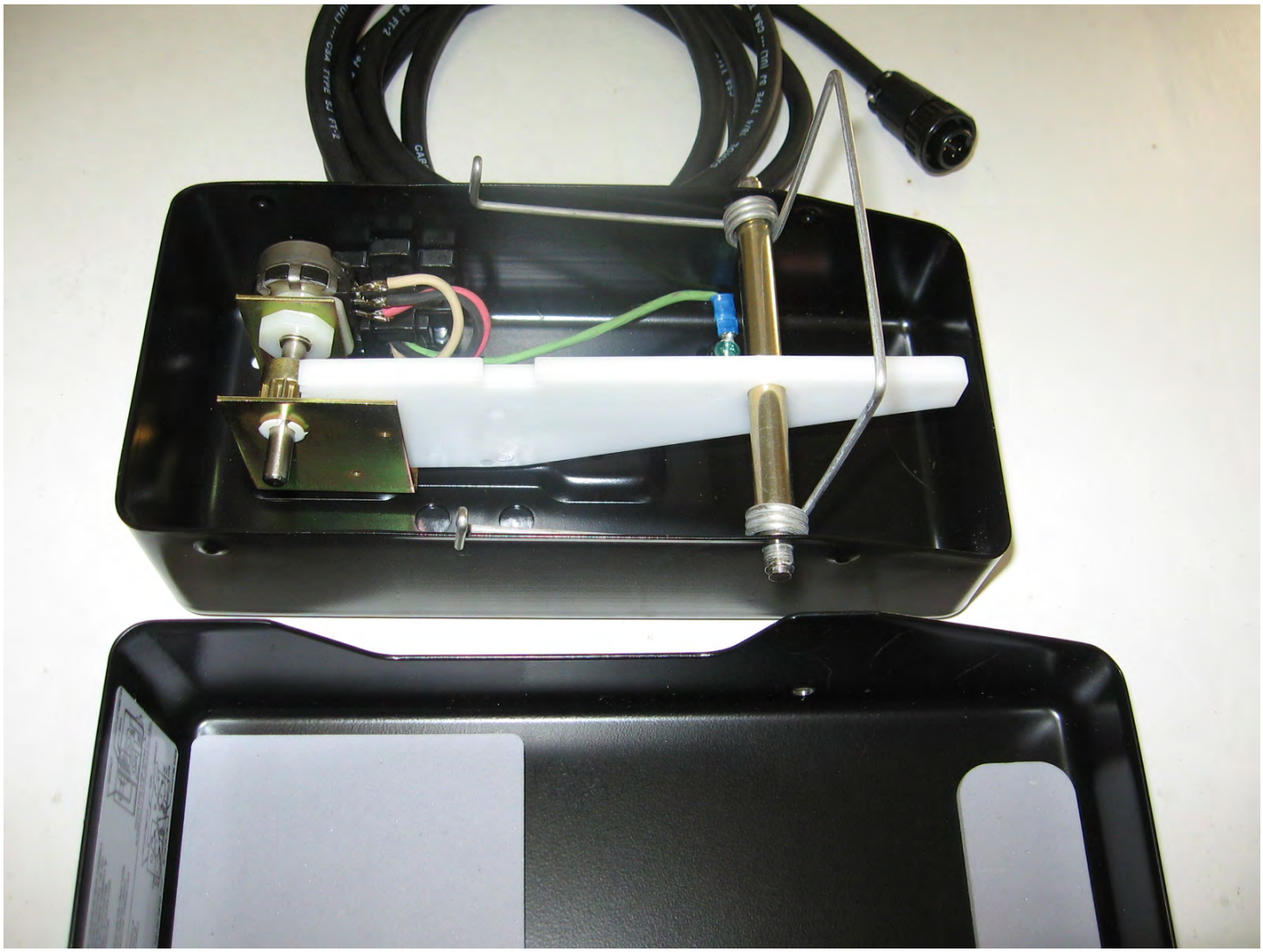
Part identification



Reference views of control box's with some part numbers and descriptions.





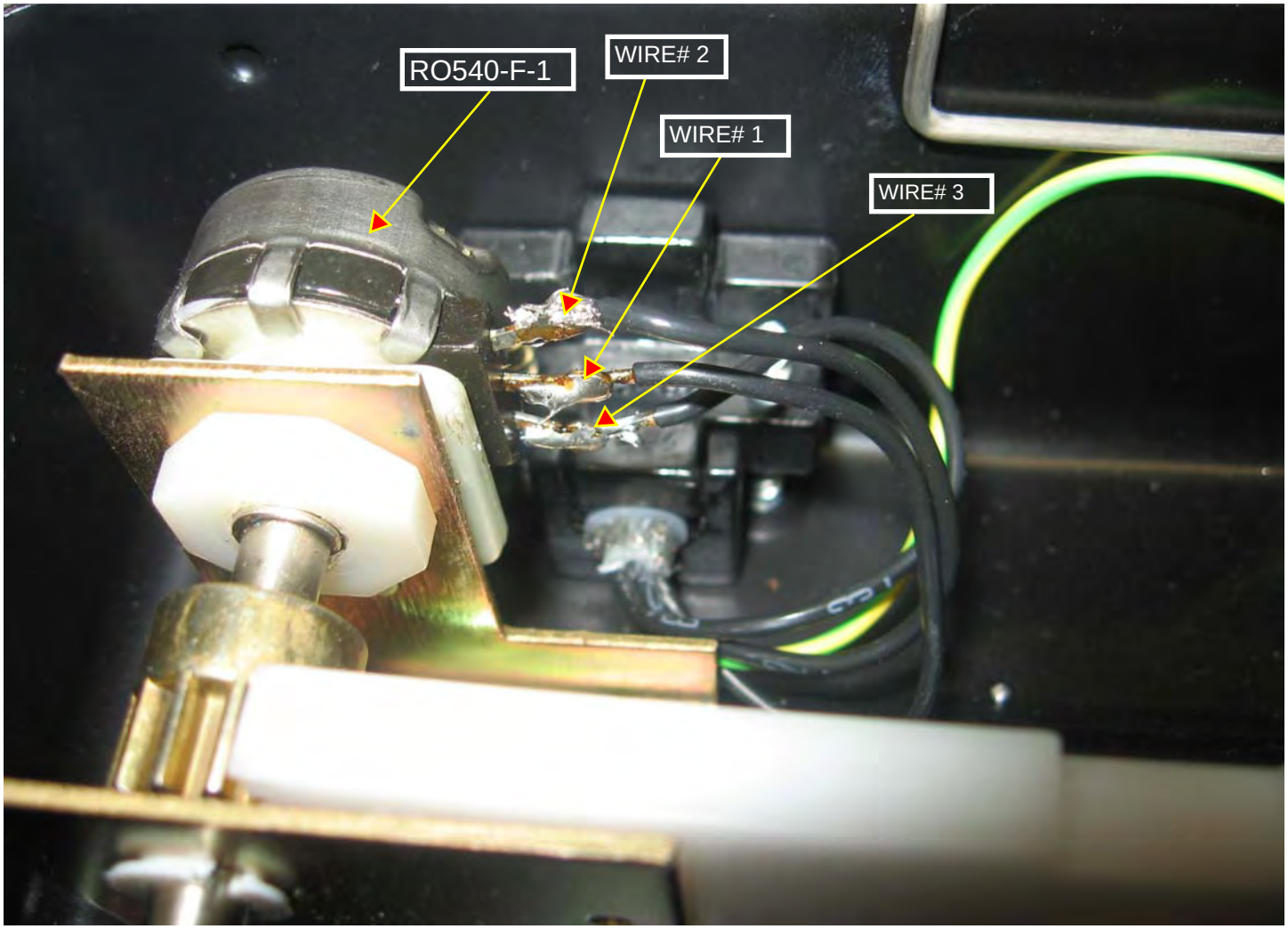


Variable Speed Foot Pedal

(View with top off for reference)

The ROTO-STAR variable speed foot pedal system consists of a modified motor controller and a heavy duty continuously variable foot pedal assembly. This system allows the speed of the ROTO-STAR welding positioner to be controlled with your foot, allowing you to more easily weld complex parts that require different speeds on different areas.

For those of you that purchased this option the safety and installation instructions came with the unit.



This view added on 4-25-08 for part clarification and to show wiring connections for new RO538 cord.

PURGE PLUG

When welding certain metals, like stainless steel, inconel, titanium, etc, the back side of the weld will end up covered in “black sugar” (as welders call it) if not kept in an inert gas (such as argon) atmosphere.

This is usually an issue when welding pipe or tubing made of these materials.

The purge plug attaches to the back end of the ROTO-STAR spindle, and allows purge gas to be flooded into the interior of the spindle and then into the interior of the pipe being welded.

When done this way, the interior of the weld will look as good or better than the outside, and the weld will infact be stronger (this isn’t just cosmetic).

Most high-purity piping or aircraft work REQUIRES that purge gas be used.

JUNE - 2009